

REMARKS

The Examiner rejected claims 18 - 20, 37 - 39, 41 - 44, and 46 under 35 USC § 103(a) as being unpatentable by Zubeldia (US Patent 6,397,224) in view of Morar (US Patent No. 6,678,822). The Examiner also rejected claim 26 and 28 - 36 under 35 USC § 103(a) as being unpatentable over Zubeldia in view of Morar and Halamka (Halamka et al., "Managing Care in an Integrated Delivery System via an Intranet", 1998, pages 1 - 5). The Examiner also rejected claim 27 under 35 USC § 103(a) as being unpatentable over Zubeldia in view of Morar and Halamka, further in view of Garvin (Garvin et al., "Ensuing Statewide Newborn Screening by Linking the New Jersey's Electronic Birth Certificate and Newborn Screening Databases", 12/1/1998, pages 1 - 2). The Examiner also rejected claim 40 under 35 USC § 103(a) as being unpatentable over Zubeldia in view of Morar, further in view of Schneier ("Applied Cryptography", second edition, 1996, pages 193 - 194). The Examiner also rejected claim 45 under 35 USC § 103(a) as being unpatentable over Zubeldia in view of Morar, further in view of Garvin.

Claims 18 - 20

In claim 18, the Applicant recites a method for linkage of de-identified records that includes obtaining client de-identified records, the client de-identified records comprising field-level encrypted match codes. The field-level encrypted match codes include at least one identification data field that is encoded prior to one-way encryption. The method also includes providing a database of master de-identified records, the master de-identified records comprising field-level encrypted match codes and comparing the match codes of the client de-identified records and the master de-identified records. Additionally, the method includes linking at least a portion of the client de-identified records with the master de-identified records using comparison of the match codes.

The Examiner states that Zubeldia everything except encoding a least one identification data field prior to encryption but that Morar discloses such at column 4, line 47 to column 5, line 5; column 8, line 55 to column 9, line 53; and column 11, lines 37 - 65. Here, Morar appears to teach many alternatives with respect to sanitizing information of certain items. However, Morar does not teach a method that includes encoding followed by encrypting. For example, Morar

generally discusses obscuring private information by means of a replacement process (e.g., that removes the private information or otherwise replaces it with other information or encrypts it). While Morar explicitly states that “[i]t is also within the scope of the teaching ... to replace the private information with an encrypted form of the private information” at column 11, lines 63 – 65, Morar does not state that encryption is followed by a process of encoding as the Applicant claims. In this regard, Morar merely states an alternative form of obscuring that is consistent with sanitization of private information. Since Morar does not teach or reasonably suggest that which the Applicant claims in claim 18, the claim is novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claim 18.

Claims 19 and 20 depend from claim 18 and inherit all of the novel and non-obvious features of the independent claim. For at least these reasons, claims 19 and 20 are also novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claims 19 and 20.

Claims 26 - 29

In claim 26, the Applicant recites a system that links de-identified records and includes a server computer that obtains client de-identified records. The client de-identified records comprise first field-level encrypted match codes. The system also includes a database that stores a plurality of master de-identified records. The master de-identified records comprise second field-level encrypted match codes. The server computer is adapted to compare the first field-level encrypted match codes and the second field-level encrypted match codes and link at least a portion of the client de-identified records with the master de-identified records based on a comparison of the first field-level encrypted match codes and the second field-level encrypted match codes. The field-level encrypted match code includes at least one identification data field that is encoded prior to one-way encryption.

The Examiner has essentially stated that Zubeldia teaches all of the Applicant’s claim elements except for: 1. encoding a least one identification data field prior to encryption and 2. linking of de-identified records on a server computer. The Examiner stated, however, that Morar does teach the encoding of an identification data field prior to encryption (i.e., at column 4, line 47 to column 5, line 5; column 8, line 55 to column 9, line 53; and column 11, lines 37 – 65)

while Halamka teaches the linking of de-identified records on a server computer (i.e., page 1, Data Sources section). With respect to Morar, the arguments regarding encoding prior to encryption as discussed in the arguments for patentability of claim 18 apply herein as well. With respect to Halamka, Halamka only states that certain types of claims "are removed and the cleansed data sets are transferred to the managed-care warehouse administrators for upsizing into Oracle." While Halamka appears to create de-identified records, Halamka does not "link" any de-identification records. Accordingly, Halamka does not supplement Zubeldia to teach or reasonably suggest that which the Applicant claims. Additionally, since Morar does not supplement Zubeldia to teach either the elements of encoding prior to encryption or de-identified record linking, claim 26 is novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claim 26.

Claims 27 - 29 depend from claim 26 and inherit all of the novel features of the independent claim. For at least these reasons, claims 27 - 29 are also novel. However, these claims recite additional features that further distinguish from the cited references. For example, in claim 27, the Applicant recites that the server computer is further adapted to probabilistically link said at least a portion of the client de-identified records with the master de-identified records. The Examiner states that Zubeldia, Morar, and Halamka in combination do not teach probabilistically linking at least a portion of the client records with master records, but that Garvin does on page 2. Here, Garvin only mentions the advantages of probabilistic matching over deterministic matching; but Garvin does not teach any particular method of such probabilistic matching. The closest thing that Garvin states is that such matching uses probabilistic weights based on frequencies of data elements, such as a match of "John" to "John" being waited less than "Eibenizer" to "Eibenizer". However, Garvin does not teach how these weights are computed let alone how they can be used to link client records with master records. One skilled in the art would not be able to make the leap to the conclusion of Garvin being combinable with three apparently unrelated references because, among other reasons, Garvin does not teach any type or reasonably suggest of de-identified records or even record linkage. Nor do the other references suggest such a combination. Accordingly, Garvin does not supplement Zubeldia, Morar, and Halamka to teach or reasonably suggest that which the Applicant claims. For at least these reasons, claim 27 is novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance

of claim 27, as well as claims 28 and 29.

Claims 30 - 36

In claim 30, the Applicant recites a system that links de-identified records and includes a database that stores a plurality of master de-identified records. The system also includes a server communicatively coupled to the database to link at least a portion of client de-identified records with the master de-identified records based on a comparison of match codes, wherein the match codes include at least one identification data field that is encoded prior to one-way encryption.

The Examiner rejected claim 30 for the same reasons of claim 26 stating that claim 30 is broader than the system of claim 26. With respect to the rejection regarding encoding prior to encryption of Morar, the Applicant respectfully traverses this rejection. The arguments in favor of patentability for claim 18 regarding such encoding prior to encryption apply herein as well. Accordingly, the Applicant maintains claim 30 is in condition for allowance and respectfully requests such disposition.

Claims 31 through 36 depend from independent claim 30 and inherit all of the novel and non-obvious features of the independent claim. For at least these reasons, claims 31 through 36 are also novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claims 31 - 36.

Claims 37 - 40

In claim 37, the Applicant recites a system that links de-identified records and includes means for obtaining client de-identified records. The client de-identified records comprising field-level encrypted match codes and the field-level encrypted match codes include at least one identification data field that is encoded prior to one-way encryption. The system also includes means for providing a database of master de-identified records, the master de-identified records comprising field-level encrypted match codes and means for comparing the match codes of the client de-identified records and the master de-identified records. Additionally, the system includes means for linking at least a portion of the client de-identified records with the master de-identified records using comparison of the match codes.

The Examiner stated that claim 37 is a system claim that corresponds to the method of claim 18 and is rejected for the same reasons. Accordingly, the arguments in favor of

patentability for claim 18 with respect to the rejections in view of Morar apply herein as well. The Applicant maintains that claim 37 is novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claim 37.

Claims 38 through 40 depend from claim 37 and inherit all of the novel and non-obvious features of the independent claim. For at least these reasons, claims 38 through 40 are also novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claims 38 through 40.

Claims 41 - 46

In claim 41, the Applicant recites a method for linkage of de-identified records that includes receiving client de-identified records and comparing match codes of the client de-identified records with match codes of master de-identified records, wherein the field-level encrypted match codes include at least one identification data field that is encoded prior to one-way encryption. The method also includes linking at least a portion of the client de-identified records with the master de-identified records in response to comparing the match codes of the client de-identified records with match codes of master de-identified records.

The Examiner rejected claim 41 for the same reasons as claim 18 stating that the method of claim 41 is broader than the method of claim 18. Accordingly, the arguments in favor of patentability for claim 18 with respect to the rejections in view of Morar apply herein as well. The Applicant maintains that claim 41 is novel and non-obvious in view of the cited references. The Applicant, therefore, respectfully requests reconsideration and allowance of claim 41.

Claims 42 through 46 depend from claim 41 and inherit all of the novel and non-obvious features of the independent claim. For at least these reasons, claims 42 through 46 are also novel and non-obvious in view of the cited references. However, these claims require additional features that further distinguished from the cited references. For example, in claim 45, the Applicant recites that linking at least a portion of the client de-identified records with the master de-identified records comprises probabilistically linking said at least a portion of the client de-identified records with the master de-identified records as similarly recited in claim 27. The Examiner rejected claim 45 in view of Garvin for essentially the same reasons as the rejection of claim 27. Accordingly, the arguments in favor of patentability for claim 27 with respect to Garvin apply herein as well. The Applicant, therefore, respectfully requests reconsideration and

allowance of claim 45, as well as claims 42 through 44 and 46.

CONCLUSION

In view of the above, the Applicant believes that all claims are in condition for allowance and respectfully requests such disposition. Should the above arguments be deemed not persuasive, the Applicant respectfully requests a prompt advisory action so that the Applicant can better evaluate options. In the event that a telephone conversation would further prosecution and/or expedite allowance, the Examiner is invited to contact the undersigned.

Respectfully submitted,

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